

**REMARKS**

The applicant respectfully requests reconsideration in view of the amendment and the following remarks. Support for amended claim 1 can be found in the specification at page 4, lines 18-24. The applicant has rewritten claim 2 into independent form. The applicant has rewritten claims 15 and 17 into dependent form. Support for newly added claims 18-27 can be found in the specification at page 4, lines 18-24.

No fee is required for the extra dependent claims. Claims 1, 2, 7, 9-11, and 15-27 are now in this case. The application contains 19 total claims. The applicant has two independent claims (claims 1 and 2).

Claims 1, 3, 6 and 11 were rejected under 35 USC 103 as being unpatentable over Miyawaki (JP 06240105) ("Miyawaki") in view of Linder (US 4683267) ("Linder"). Claims 1, 3, 6, 11, 15 and 16 are rejected under 35 USC 103 as being unpatentable over Miyawaki in view of Yabuta (US 5889115) ("Yabuta"). Claims 1, 3, 6, 11, 15 and 17 are rejected under 35 USC 103 as being unpatentable over Miyawaki in view of Bederke (US 5426156) ("Bederke"). Claims 1, 2, 3, 6, 7 and 11 are rejected under 35 USC 103 as being unpatentable over Natarajan (US 4480071) ("Natarajan") in view of Linder. Claims 1, 2, 3, 6, 7, 11, 15 and 16 were rejected under 35 USC 103 as being unpatentable over Natarajan in view of Yabuta. Claims 1, 2, 3, 6, 7, 11, 15 and 17 are rejected as being unpatentable over Natarajan in view of Bederke. Claims 9 and 10 are rejected as being unpatentable over Natarajan in view of Bederke or Yabuta or Linder in further view of Sharma (US 6090319) ("Sharma"). Claims 1, 2, 3, 7, 9, 10, 11, 15, 16 and 17 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4, 9, 10-12, 16-24 of copending Application No. 10/506541 in

view of Laughner (US 5286790). It is noted that copending Application No. 10/506541 issued as US Patent No. 7,169,887. The applicant respectfully traverses these rejections.

**REJECTION OVER MIYAWAKI UNDER 35 U.S.C. § 103**

Claims 1, 3, 6 and 11 were rejected under 35 U.S.C. § 103 as being unpatentable over Miyawaki in view of Linder. Claims 1, 3, 6, 11, 15 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyawaki in view of Yabuta. Claims 1, 3, 6, 11, 15 and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyawaki in view of Bederke.

The applicant's claimed invention of claim 1, requires that the catalyst is present in an amount from 0.0007 to 0.005% by weight, based on the total weight of the molding composition. Miyakawaki teaches away from this feature. Miyawaki states at the end of paragraph no. 0006 “

The loading of a component are (A) **0.01-5 weight** section is suitable to the component 100 weight section. When **there are too few amounts of catalysts, a reaction cannot fully progress and effectiveness of this invention cannot be acquired.** (emphasis added)

Clearly the primary reference, Miyakawaki teaches that you need a minimum 0.01 weight percent of the catalyst which is double the maximum claimed by the applicant's claim 1. Therefore, Mikiyakawki clearly teaches away from the applicant's claimed invention and these rejections should be withdrawn.

**Rejections over Natarajan in view of the Linder, Yabuta or Bederke**

Claims 1, 2, 3, 6, 7 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Natarajan in view of Linder. Claims 1, 2, 3, 6, 7, 11, 15 and 16 were rejected under 35

U.S.C. § 103(a) as being unpatentable over Natarajan in view of Yabuta. Claims 1, 2, 3, 6, 7, 11, 15 and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Natarajan in view of Bederke. Claims 9 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Natarajan in view of Bederke or Yabuta or Linder in further view of Sharma.

The primary reference in all these rejection is Natarajan. As the Examiner correctly recognized Natarajan does not teach the applicant's claimed catalyst. In fact, Natarajan discloses at col. 7, lines 46 to col. 8, line 29,

The isocyanate catalyst which is employed may comprise any of the known catalysts which serve to facilitate (1) the unblocking of the blocked isocyanate (if employed) and/or (2) the coupling reaction between the oxymethylene polymer and the filler at the melt processing conditions employed. Specifically, the catalyst will catalyze the unblocking of the blocked isocyanate (if employed) to permit it to react and bridge the terminal reactive hydroxyl groups in the polymer and the reactive groups in the filler. Such catalysts include but are not limited to the

- 1) organic salts of alkali metals,
- 2) lead,
- 3) iron,
- 4) tin,
- 5) cobalt,
- 6) vanadium,
- 7) titanium;
- 8) trialkylenediamines;
- 9) N-alkylethyleneimines; and the like, the following being typical:
- 10) sodium o-phenylphenate;
- 11) sodium trichlorophenate;
- 12) sodium tetramethoxyborate;
- 13) sodium tetrachlorophenate;
- 14) sodium methylcarbonate;
- 15) sodium pentachlorophenate;
- 16) lead linoresinate;
- 17) lead naphthenate;
- 18) lead oleate;
- 19) lead 2-ethylhexonate;
- 20) lead resinate;
- 21) ferric 2-ethylhexoate;
- 22) ferric chloride;
- 23) ferric acetylacetonate;

- 24) dibutyltin sulfide;
- 25) dibutyltin acetylacetonate;
- 26) dibutyltin dibutoxide;
- 27) dibutyltin maleate;
- 28) dibutyltin di-o-phenylphenate;
- 29) dibutyltin dilaurate;
- 30) dibutyltin diacetate;
- 31) dibutyltin di-2-ethylhexoate;
- 32) stannous oleate;
- 33) stannous 2-ethylhexoate;
- 34) stannous chloride;
- 35) butyltin trichloride;
- 36) tributyltin oxide;
- 37) tributyltin o-phenylphenate;
- 38) tributyltin cyanate;
- 39) cobalt 2-ethylhexoate;
- 40) cobalt naphthenate;
- 41) cobalt linoresinate;
- 42) cobalt benzoate;
- 43) cobalt acetylacetonate;
- 44) vanadium acetylacetonate;
- 45) vanadyl acetylacetonate;
- 46) tetraisopropyl titanate;
- 47) dibutyltitanium dichloride;
- 48) methoxytitanium trichloride;
- 49) butoxytitanium trichloride;
- 50) tetrabutyl titanate;
- 51) tetra-2-ethylhexyl titanate;
- 52) titanium acetylacetonate;
- 53) triethylenediamine; n-ethylenimine;
- 54) tetramethylguanidine;
- 55) 1-methyl-4-(dimethylaminoethyl) piperazine;
- 56) N,N,N',N'-tetramethyl-1,3-butylenediamine;
- 57) N-ethylmorpholine; triethylamine;
- 58) copper acetylacetonate;
- 59) copper naphthenate;
- 60) manganous acetylacetonate;
- 61) manganous linoresinate;
- 62) manganous 2-ethylhexoate;
- 63) cadmium nitrate;
- 64) cadmium laurate;
- 65) cadmium alkyl aryl phosphite complex;
- 66) zinc acetylacetonate;
- 67) zinc naphthenate;
- 68) thorium acetylacetonate;
- 69) thorium nitrate;

- 70) nickel acetylacetonate;
- 71) nickelocene;
- 72) chromium acetylacetonate;
- 73) uranyl nitrate;
- 74) dimethylsilicon-di-2-ethylhexoate;
- 75) magnesium acetylacetone;
- 76) aluminum acetylacetonate;
- 77) zirconium acetylacetonate;
- 78) beryllium acetylacetonate;
- 79) tributylphosphine;
- 80) diphenylmercury;
- 81) n-alkyl dimethyl benzyl ammonium saccharinates wherein said alkyl is C.sub.12 -C.sub.18 and mixtures thereof and the like. Further reference may be made to Industrial and Engineering Chemistry, Product Research and Development, Vol. 1, No. 4, December 1962, pages 261-264 for a further discussion of isocyanate-active catalysts<sup>1</sup>.

Natarajan discloses 81 different catalysts. In the list of 81 different catalysts the applicant does not believe that Natarajan teaches the applicant's claimed catalyst. The Examiner has asserted that one catalyst in the group is equivalent to other catalysts taught by the secondary references. The applicant respectfully disagrees with this combination. The applicant do not believe that the prior art references are combinable. Natarajan teaches away from the applicant's claimed invention and one of ordinary skill in the art would not combine the secondary references in view of the fact that the primary reference, Natarajan. For at least the above reasons these rejections should be withdrawn.

#### **Dependent Claims 18-26**

Natarajan teaches away from dependent claims 18-26. Natarajan discloses at col. col. 8, lines 30-36,

The catalyst may be employed in varying amounts ranging from about **0.15 to 2.5** percent by weight, based on the weight of the isocyanate compound. Preferably, the catalyst is employed in an amount ranging from

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<sup>1</sup> The numbers were inserted by the undersigned.

about 0.2 to 2.0 percent by weight, based on the weight of the isocyanate compound. (emphasis added)

The minimum amount of the catalyst is about 0.15% and preferably about 0.2% by weight. However, the maximum amount of catalyst claimed is 0.03 % for claims 18, 21 and 24. Clearly Natarajan teaches away from this low amount of catalyst. However, the maximum amount of catalyst claimed is 0.01 % for claims 19, 22 and 25. This is over a factor of ten less than the minimum amount of catalyst taught by Natarajan. Clearly Natarajan teaches away from this low amount of catalyst. However, the maximum amount of catalyst claimed is 0.005 % for claims 20, 23 and 26. This is over a factor of twenty less than the minimum amount of catalyst taught by Natarajan. Clearly Natarajan teaches away from this low amount of catalyst.

### **DOUBLE-PATENTING REJECTION**

Claims 1, 2, 3, 7, 9, 10, 11, 15, 16 and 17 were rejected under the judicially created Doctrine of Obviousness-type double patenting over Claims 1, 4, 9, 10-12, 16-24 of co-pending Application Serial No. 10/506,541 in view of Laughner.

Obviousness-type double patenting as defined is when claims in a patent application are not patentably distinguishable from claims in a patent (MPEP 804). The test applied to determine obviousness-type double patenting exists is whether or not the claims in the application define merely an obvious variation of the invention disclosed and claimed in the patent (In re Vogel and Vogel, 164 USPQ 619 (CCPA 1970). If claims are unobvious over 35 U.S.C. §103, there can be no double patenting (In re White and Langer, 160 USPQ 417 (CCPA 1969)). The Examiner refers that these claims overlap or at least encompass each other. Further, the overlapping of claims is not a significant or controlling factor in obviousness-type

double patenting (In re Longi et al., 225 USPQ 645 (CAFC 1985)). The proper consideration of obviousness type doubling patenting is the improper extension of the patent right. The applicants believe that these applications are patentably distinct for the reasons stated below.

Claim 1 of the '541 application states,

A **thermoplastic molding** composition comprising

- a) **from 20 to 90% by weight of a thermoplastic polymer selected from the group consisting of polyolefin, modified polyolefin; polyacrylate, polymethacrylate, polymers produced via polymerization of esters and/or amides of acrylic or methacrylic acid, and also their copolymers, polyamide, polyester, polycarbonate, polyether, polythioether, polyphenylene oxide, polyarylene sulfides, and their mixtures**
- b) from 10 to 80% by weight of a reinforcing fiber and
- c) from 0.00001 to 1.0% by weight of a phosphane, sulfonium salt or a titanyl compound and/or 0.00001 to 0.03% by weight of a phosphonium salt or ammonium salt or their mixtures as a catalyst which catalyzes the formation of covalent bonds between the thermoplastic polymer and the surface of the additive.

8. The thermoplastic molding composition as claimed in claim 1, wherein the catalyst is selected from the group consisting of ethyltriphenylphosphonium bromide, tetraphenylphosphonium bromide, tetrabutylphosphonium bromide, stearyltributylphosphonium bromide, triphenylphosphane, and their mixtures.

Claim 1 of the instant application is as follows:

A **polyacetal molding composition** comprising

- a) from 20 to 99% by weight of a **polyacetal homo- or copolymer**,
  - b) from 0.1 to 80% by weight of an additive, and
  - c) up to 1.0% by weight of a catalyst which catalyzes a chemical reaction between the polyacetal matrix polymer and the surface of the additive,
- where the catalyst does not comprise the element boron and is not a Brönsted acid and wherein the catalyst is selected from the group consisting of ethyltriphenylphosphonium bromide, tetraphenylphosphonium bromide, tetrabutylphosphonium bromide, stearyltributylphosphonium bromide, triphenylphosphane, n-butyl titanate, and their mixtures and wherein said catalyst is present in an amount from 0.0007 to 0.005% by weight, based on the total weight of the molding composition.

Claim 2 of the instant application is as follows:

A **long-fiber-reinforced polyacetal molding composition** as claimed in claim 1 comprising

- a) from 20 to 90% by weight of a polyoxymethylene homo- or copolymer,
- b) from 10 to 80% by weight of a reinforcing fiber,
- c) from 0.00001 to 0.5% by weight of at least one catalyst which catalyzes a chemical reaction between the polyacetal homo- or copolymer and the surface of the reinforcing fiber and

wherein the catalyst does not comprise the element boron and is not a Brönsted acid and wherein the catalyst is selected from the group consisting of ethyltriphenylphosphonium bromide, tetraphenylphosphonium bromide, tetrabutylphosphonium bromide, stearyltributylphosphonium bromide, triphenylphosphane, n-butyl titanate, and their mixtures

In the instant case, one difference between the claimed invention and the claimed '541 application is that the claimed invention is directed to a polyacetal molding composition while the claimed invention of the '541 application is to a thermoplastic molding composition<sup>2</sup>.

A second difference is between the two is that component a) in the '541 application is a) **a thermoplastic polymer** while component a in the applicant's claimed invention is a **polyacetal homo- or copolymer**.

The Examiner has relied upon Laughner for these features. The applicant does not believe that Laughner is combinable with the '541 application. For the above reasons, this rejection should be withdrawn.

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<sup>2</sup> It is noted that the preamble in claims 16-20 inadvertently state "polyacetal molding composition". The applicant filed a request for Certificate of Correction to correct this obvious typographical error.

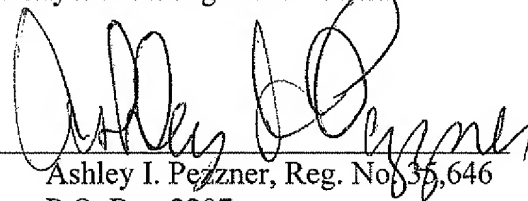


A two month extension fee has been paid. Applicant believes no fee is due with this request. However, if a fee is due, please charge our Deposit Account No. 03-2775, under Order No. 05587-00368-US from which the undersigned is authorized to draw.

Respectfully submitted,

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